

REMARKS

The above amendment and these remarks are responsive to the Office Action of Examiner Joshua A. Kading, dated 17 September 2004.

Claim Objections

Claims 1, 5, 14, 15, 16, 23, and 25 have been objected to for certain informalities.

With respect to claims 1, 16, and 25, the Examiner suggests that the phrase "discarding any burst in which all packets in said burst have not been received back and in the order said packets were transmitted" be changed to --discarding any burst in which all packets in said burst have not been received back and are not in the order said packets were transmitted--. Applicants agree to this clarification, and have amended the claims accordingly, with further clarification applied to claim 25.

With respect to claims 1, 14, 16, and 25, the Examiner suggests that the phrase "speed, each said burst" be changed to --speed, wherein each said burst--. Applicants agree,

and have amended these claims accordingly.

With respect to claims 1, 14, 16, and 25, the Examiner suggests that the last word "and" should be deleted from several lines. Applicants have amended the claims as suggested.

With respect to claims 5, and 20, the Examiner suggests that the formula "n=1...i" be changed to --n=1,2...i--. Applicants have amended the claims as suggested.

With respect to claim 15, the Examiner suggests changing "said method" to --said instructions--. Applicants have amended the claim as suggested.

With respect to claims 16, and 23, the Examiner objects to certain typographical errors. Applicants have corrected these claims as suggested.

35 U.S.C. 103

Claims 11 and 15 have been rejected under 35 U.S.C. 103(a) over Kaplan et al. (U.S. Patent 6,473,404 B1) in view of applicant's admitted prior art (AAPA), and claim 14 has

been rejected under 35 U.S.C. 103(a) over Kaplan et al.

Applicants have amended claims 11, 14, and 15 to clarify that their invention analyzes capacity and utilization not only of the network but also of its component end processor and network parts in deriving measures of network speed.

Kaplan uses individual pings sent in isolation to measure the end-to-end round trip time. Kaplan neither performs nor describes any further analysis of the ping. If a ping takes 2 seconds on path A and 3 seconds on path B, then path A is faster according to Kaplan's method. Kaplan does not analyze the ping's round trip time into component parts.

On the other hand, applicants' invention analyzes pings of different and like sizes, sent in isolation and in bursts, to compute the network's latency (i.e., propagation delay plus device processing times), the network's queue delay (i.e., what we denote as σTw), the network's utilization, and the network's serialization speed. Moreover, our methodology distinguishes the network's throughput (also called streaming) speed from the network's

discrete speed. This has great importance for analyzing the network's performance in handling different types of application traffic.

For example, Kaplan refers repeatedly to how the network will perform in handling file transfer traffic. Yet observing the end-to-end transit times of pings sent in isolation from each other tells very little about how the network will perform in handling file transfers. This is because, as is noted in applicants' co-pending patent application Serial No. 09/76,179, that an individual packet's transit time is increased for each hop in the network. So, for example, if a network consists of two hops, each of a speed of 19.2 kbps, a ping across it will behave the same as a ping across an equal length single hop 9.6 kbps network. In fact, conversational applications will also behave the same in these two networks. However, file transfers will go twice as fast across the two hop 19.2 kbps network as the single hop 9.6 kbps network. Kaplan's method fails to take this into account. Applicants' method would discover the streaming speed of each of these networks (19.2 kbps for the 2 hop network, and 9.6 for the 1 hop network), the conversational speed of the networks (both networks would be 9.6 kbps conversational speed), the

latency of the network (dependent on the end-to-end length of the network), and the utilization of the network (both streaming utilization and conversational). Thus, applicants' invention is not taught by Kaplan, and is a far improved art for network analysis.

Specifically, at Col. 6, lines 15-21, Kaplan is using the unanalyzed ping end-to-end time as a raw component of a manufactured "quality" number from which a value called "\$speed" can be computed, where \$speed is a factor used as an indicator of relative performance of a path. This measure is subject to all the flaws mentioned above... i.e., there is no measure of the path's actual streaming capacity and no analysis of why a ping took more or less time along one path than another. Without such analysis, there is no true determination of how the network can be expected to perform. Applicants invention provides precise answers to these questions by performing a deep analysis.

The Examiner responds to the above distinctions by observing that applicants' claims do not recite certain distinguishing features, including the analyzing a ping's round trip time into component parts.

Applicants have amended claim 11, 14, and 15 to recite that feature, and urge that these claims be allowed as amended.

Allowable Subject Matter

Claims 1-5, 7-10, 16-24, and 25 have been deemed allowable provided the above objections to claims 1, 5, 16, 23, and 25 are overcome. Applicants have amended claims 1, 5, 16, 23, and 25 as suggested by the Examiner to overcome the objections, and requests that claims 1-5, 7-10, 16-24, and 25 be allowed.

SUMMARY AND CONCLUSION

Applicants urge that the above amendments be entered and the case passed to issue with claims 1-5, and 7-25.


The Application is believed to be in condition for allowance and such action by the Examiner is urged. Should differences remain, however, which do not place one/more of the remaining claims in condition for allowance, the Examiner is requested to phone the undersigned at the number provided below for the purpose of providing constructive

assistance and suggestions in accordance with M.P.E.P.
Sections 707.02(j) and 707.03 in order that allowable claims
can be presented, thereby placing the Application in
condition for allowance without further proceedings being
necessary.

Sincerely,

R. K. P. Klassen, et al.

By


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